CLAIMS

1. A method of manufacturing a tire provided with a carcass toroidally extending between both bead cores, an inner liner disposed in the inner circumferential side of the carcass and side-reinforcing rubber layers with generally crescent-shaped section interposed between the carcass and the inner liner, the method comprising;

a first step of gripping each of a pair of bead cores with a bead-gripping ring, said bead cores being so disposed that they contact with the outer peripheral face of a cylindrically-shaped carcass member over an entire periphery and are spaced from each other in the axial direction;

a second step of attaching the side-reinforcing rubbers on the peripheries of a pair of a first expansible/contractible drum with a diameter being substantially the same along the axial direction, said drums being provided in such a manner that they can mutually move back and forth on the same axial line;

a third step of inserting said first drums into the radially inward of said carcass member, radially expanding the drums, pressing the side-reinforcing rubber against the inner circumferential face of the carcass member to form a first cylindrical member and thereafter removing the first drums from the radially inward of the first cylindrical member;

a forth step of attaching at least one member including an inner liner rubber on the periphery of a second expansible/contractible drum with a diameter being substantially the same along the axial direction to form a second cylindrical member;

a fifth step of inserting said second drum on which said second cylindrical member is attached into the radially inward of said first cylindrical member, radially expanding the drum, pressing the second cylindrical member against the inner circumferential face of the first cylindrical member to form a third cylindrical member; and

a sixth step of deforming a part of the third cylindrical member extending between the both bead cores into a toroidal shape, attaching a belt member and a tread rubber thereon to form a green tire, and setting and vulcanizing the green tire in a mold,

wherein the radially-expanding operation of the first drums, the mutually-approaching operation of the first drums and the mutually-approaching operation of the bead-gripping rings are so synchronized in the third step that the inner circumferential face of the carcass member is tightly pressed against the outer circumferential face of the side-reinforcing rubber.

2. The method of manufacturing a tire according to claim 1, wherein, assuming that P_1 is the radially outermost point in the meridian line section of the side-reinforcing rubber after the first drum having been expanded, P_2 is the axially innermost point, P_3 is the axially outermost point, r_1 is the radial distance between P_1 and P_2, d_1 is the axial distance between P_1 and P_2, d_2 is the axial distance between P_2 and P_3, s_1 is the peripheral distance between P_1 and P_2, and s_2 is the peripheral distance between P_2 and P_3 via P_1,
while the pair of the first drums are radially expanded in the third step, the radial expansions of the pair of the drums are synchronized, as well as the space between the first drums is decreased by $(2x(s_1-d_1))$ and the space between the bead-gripping rings is decreased by $(2x(s_2-d_2))$ after the point P_1 abuts the inner circumferential face of the carcass member and before the first drums are radially expanded by $(2xr_1)$, so that the operations of the first drums and the bead-gripping rings are synchronized.

3. The method of manufacturing a tire according to claim 1 or 2, wherein in the second step, when the side-reinforcing rubber is applied, a continuous unvulcanized rubber ribbon is wound around in plural turns on the periphery of the first drum.

4. A tire provided with a carcass toroidally extending between both bead cores, an inner liner disposed in the inner circumferential side of the carcass and side-reinforcing rubber layers with generally crescent-shaped section interposed between the carcass and the inner liner, the tire comprising the side-reinforcing layer consisting of a continuous rubber ribbon wound around in plural turns.